TRAFFIC TECH

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THE DETECTION OF DWI AT BACS BELOW .10

The behavioral cues used by police to identify impaired drivers were developed in the 1980's by the National Highway Traffic Safety Administration (NHTSA) for a Blood Alcohol Concentration (BAC) level of .10. As more and more states are lowering their BAC level to .08, NHTSA completed a revalidation of the cues at the lower level. The results are 24 driving cues that are good predictors of DWI at .08, with few changes from the earlier work. Police who observe drivers with these behaviors have sufficient grounds to make an impaired driving stop.

Description of the Research

The technical report describes how 34 driving cues and 10 post-stop cues were identified from a comprehensive review of the low BAC literature, interviews with DWI experts from across the USA, a database of low BAC arrest reports, and two field studies. These behavioral cues were good predictors of DWI at .08, warranting further evaluation.

Next, five law enforcement agencies participated in the second field study and recorded the driving and

DWI DETECTION GUIDE

Weaving plus any other cue: p = at least .65

Any two cues: p = at least .50

PROBLEMS MAINTAINING PROPER LANE POSITION

- Weaving • Weaving across lane lines **p=.50-.75**
- Straddling a lane line • Swerving
- Turning with a wide radius • Drifting
- Almost striking a vehicle or other object

SPEED AND BRAKING PROBLEMS **p=.45-.70**

- Stopping problems (too far, too short, or too jerky)
- Accelerating or decelerating for no apparent reason
- Varying speed • Slow speed (10+ mph under limit)

VIGILANCE PROBLEMS **p=.55-.65**

- Driving in opposing lanes or wrong way on one-way
- Slow response to traffic signals
- Slow or failure to respond to officer's signals
- Stopping in lane for no apparent reason
- Driving without headlights at night*
- Failure to signal or signal inconsistent with action*

JUDGMENT PROBLEMS **p=.35-.90**

- Following too closely
- Improper or unsafe lane change
- Illegal or improper turn (too fast, jerky, sharp, etc.)
- Driving on other than the designated roadway
- Stopping inappropriately in response to officer
- Inappropriate or unusual behavior (throwing, arguing, etc.)
- Appearing to be impaired

POST STOP CUES **p ≥ .85**

- Difficulty with motor vehicle controls
- Difficulty exiting the vehicle
- Fumbling with driver's license or registration
- Repeating questions or comments
- Swaying, unsteady, or balance problems
- Leaning on the vehicle or other object
- Slurred speech
- Slow to respond to officer/officer must repeat
- Provides incorrect information, changes answers
- Odor of alcoholic beverage from the driver

* p ≥ .50 when combined with any other cue:

- Driving without headlights at night
- Failure to signal or signal inconsistent with action

The probability of detecting DWI by random traffic enforcement stops at night has been found to be about three percent (.03)

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post-stop cues they observed in enforcement stops, regardless of the disposition of the stop. For drivers who showed objective signs of having consumed alcohol, the BACs were recorded. By recording data on all stops, it was possible to calculate the proportion of stops where specific cues were found to be associated with various BAC levels. These data, along with the archival, interview, and earlier field data led to recommendations of the driving cues that are the best predictors of DWI at .08 BAC.

The final step was to develop materials for formal validation of the driving cues. A draft DWI Detection Guide, training booklet, and training video were field tested by law enforcement agencies in 11 States that have an .08 BAC limit for DWI. Experienced law enforcement officers reviewed the video and printed training materials, and then recorded data in every enforcement stop they made, regardless of the disposition of the stop. They used the same data collection form as in the first phase of the study.

Data from more than 12,000 enforcement stops during all phases of this research project were gathered. The stops were made by several hundred participating officers, representing more than 50 law enforcement agencies from across the country.

DWI Cues at .08 Same as .10 BAC

The results of the Phase 1 study largely replicated at the .08 BAC level what the original NHTSA study reported at .10 BAC in the early 1980s. However, this study found no cues that were predictive of impaired driving at levels below .08. The Phase 2 validation study further confirmed the cues that were contained in the original NHTSA guide, with a few additional driving cues and 10 post-stop cues.

The Guide shown on the first page breaks down the 24 DWI cues into four main functional categories in the training materials: *Problems Maintaining Proper Lane Position, Speed and Braking Problems, Vigilance Problems*, and *Judgment Problems*. The training materials incorporate slight modifications based on the results of the validation study.

HOW TO ORDER

There are three publications available -- ***The Detection of DWI at BACs Below .10*** Technical Report, a Pocket-sized Brochure called ***The Visual Detection of DWI Motorists***, and a ***Training Videotape***, prepared by Anacapa Science of Santa Barbara, California. Please specify which you want by writing to the Media & Marketing Division, NHTSA, NTS-21, 400 Seventh Street, S.W., Washington, DC 20590, or send a fax to (202) 493-2062.

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